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| 10/078,710 | 02/21/2002 | Motohisa Nishina | 0033-0789P | 6233 |

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| EXAMINER |
|---|
| LEE, BENNY T |

| ART UNIT | PAPER NUMBER |
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| 2817 | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

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| ART UNIT | PAPER NUMBER |
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DATE MAILED:

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 6 May 2003 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire three (3) month(s), ____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449
4. ☐ Notice of Informal Patent Application, Form PTO-152
5. ☐ Information on How to Effect Drawing Changes, PTO-1474
6. ☐ _____

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1-8 are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims 1-8 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.

8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. These drawings are ☐ acceptable; ☐ not acceptable (see explanation).

10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed _____, has been ☐ approved. ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.

12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

PTOL-326 (Rev. 7-82) EXAMINER'S ACTION

SN 78710

## DETAILED ACTION

### *Specification Objections*

The disclosure is objected to because of the following informalities: Page 1, line 13, note that "BS tuner" needs further clarification; lines 14, 15, note that "to the inside" needs to be rephrased for clarity; line 20, note that "makes it unrealistic" needs to be rephrased. Page 2, lines 4, 7, note that "the" should precede each occurrence of "LNB"; line 22, note that --a-- should precede "harmonic". Page 4, line 6, note that --is-- should precede "generated". Page 4, lines 17, 28; page 5, line 4; page 8, line 1, note that "section" should be rewritten as --sectional--. Page 5, line 20, note that --(BPF)-- should precede "14". Page 6, line 8, note that --depicted in Fig. 10" should follow "structure" for clarity; line 30, note that "from flying outside" should be rephrased; line 32, note that the acronym "LNA" needs to be strictly defined. Page 8, line 5, note that --B-- should follow "portion" for clarity; lines 28, 32, note that --(L)-- should follow each occurrence of "coil"; lines 28, 33, note that --(C)-- should follow each occurrence of"capacitor". Page 9, line 3, note that --(i.e. 84 or 92)-- should follow "trap"; lines 9, 10, note that "wave flying onto the contact pin" should be rephrased. Note that reference label "6" appearing in Fig. 1 needs to be described in the specification. Note that in Fig. 4, the reference label "BRANCH" needs to be described in the specification. In Fig. 9, note that reference labels (TO 10, FROM 20) need to be respectively described in the specification. In Fig. 13, note that reference label "246" needs to be described in the specification. Appropriate correction is required.

### *Drawing Objections*

The drawings are objected to because of the following: In Fig. 4, reference labels --(4,

8, 10, 12, 20, 22, 24)-- should be added to the sections labeled (LNA, BPF, MIX1, LO1, POWER SUPPLY, SELECT, IF AMP), respectively; In Fig. 5, reference labels --(14, 16, 18)-- should be added to the sections labeled (BPF2, LO2, MIX2), respectively; In Fig. 8, reference labels --(A, B)-- need to be labeled. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC 112***

Claim 2-15 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, note that the recitation of the "second local oscillation circuit" being "supplied with a power supply potential from the first circuit board" is not definite since no --power supply circuit-- has been positively recited as being on the "first printed circuit board" (i.e. claim 4 is the first instance of a "power supply circuit" being recited) and the "first printed circuit board", being a passive element, can not by itself function to provide "potential.

***Claim Objections***

In claim 2, lines 7, 8 & claim 8, line 3, note that --printed circuit-- should precede each occurrence of "board" for consistency of description.

In claim 3, last paragraph, note that "formed" should be rewritten as --disposed--.

***Claim Rejections - 35 USC ' 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant' s admitted prior art figures 10-13 and description thereof (hereinafter "AAPA figures 10-13") in view of Kanda et al. United States Patent No. 5,630,226 (of record).

The AAPA figure 10 shows a satellite broadcast receiving device comprising: a chassis (232); first and second printed circuit boards (234, 236); and respective local oscillation circuits (218, 212) located on the ground planes (246). Figure 11 shows the contact pin (262) that connects the two power supplies for the oscillation circuits and figure 13 shows all of the holes formed through the various boards and ground planes (with respect to claim 2). However, the AAPA figure 10 does not show part of the chassis as forming the ground planes.

The Kanda et al. reference discloses in figure 1 two circuit boards (37, 37a) located on opposing ground planes of a part of the chassis (39) in a satellite receiver device thereby realizing a smaller structure (col. 4, lines 22-31).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the first and second oscillation circuits with respective circuit boards on either side of a portion of the chassis serving as two ground planes in the device AAPA figure 10 as taught by Kanda et al. (i.e. substitution of the chassis partition ground plane in place of the ground planes 246) because such a modification would have advantageously reduced the

size of the receiving device.

Claims 3, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA figures 10-13 in view of Kanda et al. as applied to claim 2 above, and further in view of Saitoh et al. United States Patent No. 4,353,132 (both of record).

As noted above, the AAPA figures 10-13/Kanda et al. device suggests a contact pin that is necessarily inserted through holes in the printed circuit boards and chassis partition ground planes but does not disclose that the contact pin has a head.

Saitoh et al. discloses in figure 6 a receiver device with contact pins (23, 24) having a head larger than the holes through which the shaft portion goes. The head, as would have been well known, allows the pin to be inserted only a certain amount before stopping.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted the art-recognized equivalent contact pin with head of Saitoh et al. in place of the headless contact pin of AAPA figures 10-13/Kanda et al. because such a substitution of art-recognized equivalent contact pins would have advantageously facilitated manufacturing.

Regarding claim 8, note that the shaft portion extends beyond the circuit board (much in the same manner as applicant's pin) ans as such would have inherently function in the same manner as applicant's contact pin in suppressing undesired spurious signals.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA figures 10-13 in view of Kanda et al. as applied to claim 2 above, and further in view of

Nakamura United States Patent No. 5,584,064 (both of record).

As noted above, the AAPA figures 10-13/Kanda et al. device suggests two bias supplies but does not disclose the filter structure including L-shaped traps adjacent the contact pin.

The Nakamura reference discloses in figure 1 a satellite receiver device including a DC bias supply (G1, G2) with L-shaped traps shown near (3, 13) as well as stubs that are also shown that are well known to remove unwanted signals from the bias circuit.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have added L-shaped trap stubs as exemplified by Nakamura to the device of AAPA figures 10-13/Kanda et al. because such a modification would have removed unwanted signals thereby suggesting the modification. With respect to "adjacent", the broadest, reasonable interpretation means "nearby" which includes everything on each of the circuit boards with respect to the contact pin.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA figures 10-13 in view of Kanda et al. as applied to claim 2 above, and further in view of Nakamura United States Patent No. 6,472,958 (both of record).

As noted above, the AAPA figures 10-13/Kanda et al. device suggests two bias supplies but does not disclose the filter structure including an LC low pass filter that blocks frequencies at least above 1 GHz.

The Nakamura reference (>958) discloses in figure 2 a low pass filter for the bias supply of a LNB receiver device including a series inductor 12 and a shunted capacitor 14 that block

frequencies above 1 GHz (see cols. 3, lines 56-60 and 4, lines 33-38) thereby improving the VSWR (col. 4, lines 55-59).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have added an LC low pass filter as taught by Nakamura to DC supply bias lines in the device of AAPA figures 10-13/Kanda et al. because such a modification would have advantageously improved the VSWR.

***Arguments***

Applicant's arguments filed 6 May 2003 have been fully considered but they are not persuasive.

Applicant has argued that with respect to independent claim 1, that in the admitted prior art, the metal plate is of insufficient thickness to achieve the reduction of spurious noise. Moreover, it has been argued that even if the combination with Kanda were made the resultant "compact" structure would not provided the requisite shielding needed for reducing spurious noise as required by independent claim 1.

In response to applicant's argument that a sufficiently thick metal plate is needed for the reduction of spurious noise, such argument does not appear to commensurate with what is actually claimed (e.g. in independent claim 1). It should be noted that the claims do not appear to require a plate of any particular thickness. Moreover, with respect to the combination with Kanda, it should be noted that Kanda does indeed suggest that the grounded chassis therein which partitions the two circuit boards provides for reduction of any spurious leakage from the local oscillator circuits as described at col 4, ls 31-37. Accordingly, given this suggestion by Kanda, the

examiner has found that it would have been obvious to have applied such a concept to the admitted prior art circuit, since it too has dual partitioned circuit boards, to thereby impart the benefits of this spurious or leakage reduction function thereto, along with the benefits of a more compact structure. Accordingly, the above combination of references does indeed meet the claims.

With respect to the remaining obviousness rejections, it has been noted that since applicant has not explicitly argued the merits of these rejections, the examiner is assuming that the applicant has conceded that the patentability of these remaining rejections will rise or fall with the patentability of the independent claim.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benny Lee whose telephone number is (703) 308-4902.

Benny Lee

**Benny Lee**

**Primary Examiner**

**Art Unit 2817**

B. Lee

July 11, 2003